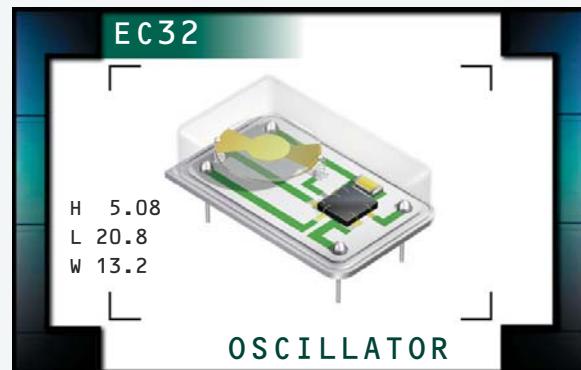


# EC32 Series

- RoHS Compliant (Pb-free)
- Voltage Controlled Crystal Oscillator (VCXO)
- 3.3V Supply Voltage
- HCMOS/TTL output
- 14 pin DIP package
- Stability to  $\pm 20$ ppm
- Wide frequency and pull range



ECLIPTEK®  
CORPORATION



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Frequency Range (MHz)</b>	1.000MHz to 44.736MHz	
<b>Operating Temperature Range</b>	0°C to 70°C or -40°C to +85°C	
<b>Storage Temperature Range</b>	-55°C to +125°C	
<b>Supply Voltage (<math>V_{DD}</math>)</b>	3.3V <sub>DC</sub> $\pm 10\%$	
<b>Aging (at 25°C)</b>	$\pm 5$ ppm / year Maximum	
<b>Load Drive Capability</b>	2TTL Load or 15pF HCMOS Load Maximum	
<b>Start Up Time</b>	10 mSeconds Maximum	
<b>Frequency Deviation / Control Voltage</b>	1.65V <sub>DC</sub> $\pm 1.65$ V <sub>DC</sub> Positive Transfer Characteristic, or 1.65V <sub>DC</sub> $\pm 1.65$ V <sub>DC</sub> Positive Transfer Characteristic	$\pm 50$ ppm Minimum $\pm 100$ ppm Minimum
<b>Linearity</b>	$\pm 20\%$ Maximum, $\pm 15\%$ Maximum, or 10% Maximum	
<b>Input Current</b>	1.000MHz to 20.000MHz	10mA Maximum
	20.001MHz to 44.736MHz	20mA Maximum
<b>Frequency Tolerance / Stability</b>	Inclusive of Operating Temperature Range, Supply Voltage, and Load	$\pm 100$ ppm, $\pm 50$ ppm, $\pm 25$ ppm, or $\pm 20$ ppm Maximum (0°C to 70°C Only)
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>	w/TTL Load	2.4V <sub>DC</sub> Minimum
	w/HCMOS Load	2.7V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>	w/TTL Load or w/HCMOS Load	0.4V <sub>DC</sub> Maximum
<b>Duty Cycle</b>	at 50% of Waveform	50 $\pm 10\%$ (Standard)
	at 50% of Waveform	50 $\pm 5\%$ (Optional)
<b>Rise Time / Fall Time</b>	0.4V <sub>DC</sub> to 2.4V <sub>DC</sub> w/TTL Load; 20% to 80% of Waveform w/HCMOS Load	5 nSeconds Maximum
<b>Period Jitter: Absolute</b>	$\pm 100$ pSeconds Maximum	
<b>Period Jitter: One Sigma</b>	$\pm 25$ pSeconds Maximum	

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EC32	PACKAGE 14 pin DIP	VOLTAGE 3.3V	CLASS 0546	REV. DATE 08/06
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## PART NUMBERING GUIDE

EC32 00 TA 15 ET - 24.000M - G

### FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)  
45=±50ppm Maximum, 25=±25ppm Maximum  
20=±20ppm Maximum

### DUTY CYCLE

Blank=50±10% (Standard), T=50±5%

### FREQUENCY DEVIATION

Blank=±50ppm Minimum (Standard)  
A=±100ppm Minimum

### AVAILABLE OPTIONS

Blank=None (Standard)  
CLXX=Custom Lead Length (See Page 133)  
G=Full Size Gull Wing (See Page 132)

### FREQUENCY

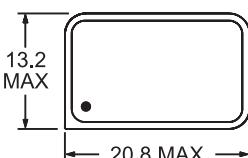
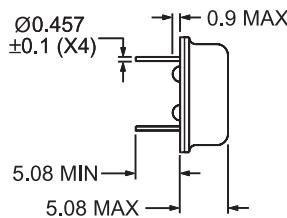
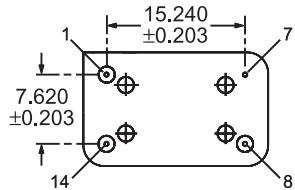
OPERATING TEMP. RANGE  
Blank=0°C to 70°C (Standard)  
ET=-40°C to 85°C

### LINEARITY

Blank=20% Maximum (Standard)  
15=15% Maximum  
10=10% Maximum

## NOTES

### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



Pin 1: Control Voltage (V<sub>c</sub>)  
Pin 7: Case Ground

Pin 8: Output  
Pin 14: Supply Voltage

### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum.
Solderability	Sn63 Solder dip at +230°C ±5°C for 5 seconds/95% coverage.
Marking Permanency	10 Strokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 3 times from a height of 20cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

### MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: EC32

Series Designator

Line 3: XX.XXX M.

Frequency in MHz  
(5 Digits Maximum + Decimal)

Line 4: XX Y ZZ

Week of Year  
Last Digit of Year  
Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EC32

PACKAGE  
14 pin DIP

VOLTAGE  
3.3V

CLASS  
OS46

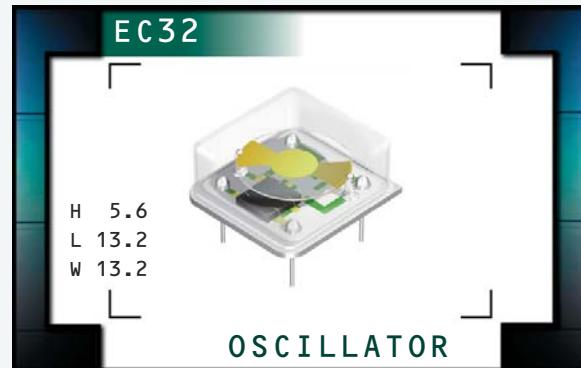
REV. DATE  
08/06



**ECLIPTEK®**  
CORPORATION

# EC32 Series

- RoHS Compliant (Pb-free)
- Voltage Controlled Crystal Oscillator (VCXO)
- 3.3V Supply Voltage
- HCMOS/TTL output
- 8 pin DIP package
- Stability to  $\pm 20$ ppm
- Wide frequency and pull range



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Frequency Range (MHz)</b>	1.000MHz to 44.736MHz	
<b>Operating Temperature Range</b>	0°C to 70°C or -40°C to +85°C	
<b>Storage Temperature Range</b>	-55°C to +125°C	
<b>Supply Voltage (V<sub>DD</sub>)</b>	3.3V <sub>DC</sub> $\pm 10\%$	
<b>Aging (at 25°C)</b>	$\pm 5$ ppm / year Maximum	
<b>Load Drive Capability</b>	2TTL Load or 15pF HCMOS Load Maximum	
<b>Start Up Time</b>	10 mSeconds Maximum	
<b>Frequency Deviation /</b>	1.65V <sub>DC</sub> $\pm 1.65$ V <sub>DC</sub> Positive Transfer Characteristic, or	$\pm 50$ ppm Minimum
<b>Control Voltage</b>	1.65V <sub>DC</sub> $\pm 1.65$ V <sub>DC</sub> Positive Transfer Characteristic	$\pm 100$ ppm Minimum
<b>Linearity</b>	$\pm 20\%$ Maximum, $\pm 15\%$ Maximum, or 10% Maximum	
<b>Input Current</b>	1.000MHz to 20.000MHz	10mA Maximum
	20.001MHz to 44.736MHz	20mA Maximum
<b>Frequency Tolerance / Stability</b>	Inclusive of Operating Temperature Range, Supply Voltage, and Load	$\pm 100$ ppm, $\pm 50$ ppm, $\pm 25$ ppm, or $\pm 20$ ppm Maximum (0°C to 70°C Only)
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>	w/TTL Load	2.4V <sub>DC</sub> Minimum
	w/HCMOS Load	2.7V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>	w/TTL Load or w/HCMOS Load	0.4V <sub>DC</sub> Maximum
<b>Duty Cycle</b>	at 50% of Waveform	50 $\pm 10\%$ (Standard)
	at 50% of Waveform	50 $\pm 5\%$ (Optional)
<b>Rise Time / Fall Time</b>	0.4V <sub>DC</sub> to 2.4V <sub>DC</sub> w/TTL Load; 20% to 80% of Waveform w/HCMOS Load	5 nSeconds Maximum
<b>Period Jitter: Absolute</b>	$\pm 100$ pSeconds Maximum	
<b>Period Jitter: One Sigma</b>	$\pm 25$ pSeconds Maximum	

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EC32	PACKAGE 8 pin DIP	VOLTAGE 3.3V	CLASS 0547	REV. DATE 08/06
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## PART NUMBERING GUIDE

**EC32 00 HSTA 15 ET - 24.000M - G TR**

**FREQUENCY TOLERANCE / STABILITY**  
 00=±100ppm Maximum (Standard)  
 45=±50ppm Maximum, 25=±25ppm Maximum  
 20=±20ppm Maximum

**PACKAGE**  
 HS=Half Size 8 Pin DIP

**DUTY CYCLE**  
 Blank=50±10% (Standard), T=50±5%

**FREQUENCY DEVIATION**  
 Blank=±50ppm Minimum (Standard)  
 A=±100ppm Minimum

**PACKAGING OPTIONS**  
 Blank=Bulk (Standard)  
 TR=Tape & Reel (only offered with Half Size G and Half Size G2 Options)

**AVAILABLE OPTIONS**  
 Blank=None (Standard)  
 CLXXX=Custom Lead Length (See Page 133)  
 G=Half Size Gull Wing (See Page 132)  
 G2=Alternate Half Size Gull Wing (See Page 132)

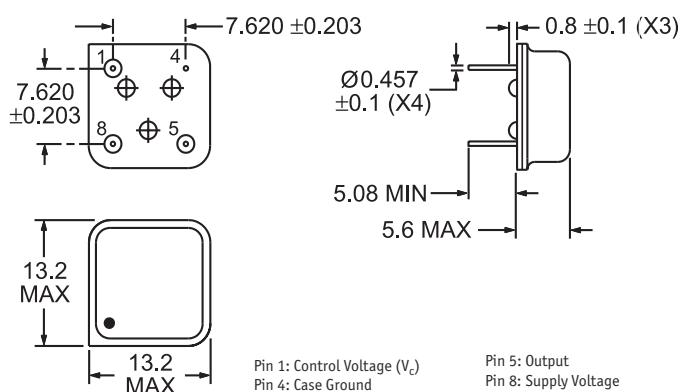
### FREQUENCY

**OPERATING TEMP. RANGE**  
 Blank=0°C to 70°C (Standard)  
 ET=-40°C to 85°C

**LINEARITY**  
 Blank=20% Maximum (Standard)  
 15=15% Maximum, 10=10% Maximum

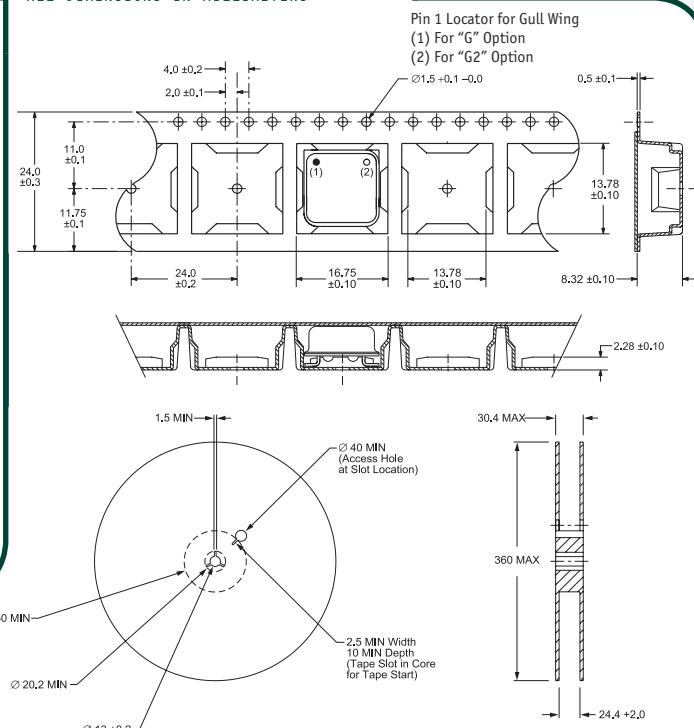
### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



### MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: EC32

Series Designator

Line 3: XX,XXX M

Frequency in MHz  
 (5 Digits Maximum + Decimal)

Line 4: XX Y ZZ

Week of Year  
 Last Digit of Year  
 Ecliptek Manufacturing Identifier

### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ± 5°C for 60 seconds minimum.
Solderability	Sn63 Solder dip at +230°C ± 5°C for 5 seconds/95% coverage.
Marking Permanency	10 Strokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 3 times from a height of 20cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MANUFACTURER  
 ECLIPTEK CORP.

CATEGORY  
 OSCILLATOR

SERIES  
 EC32

PACKAGE  
 8 pin DIP

VOLTAGE  
 3.3V

CLASS  
 0S47

REV. DATE  
 08/06